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Annotated Sheet for Figure(s) 1&2

FIG. 1 (PRIOR ART)

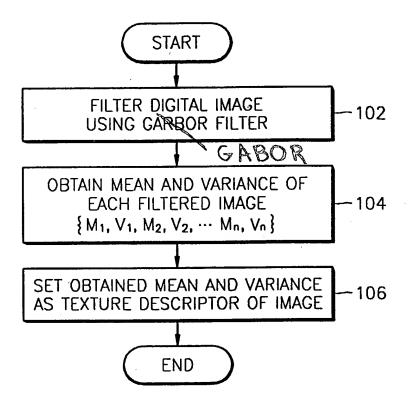
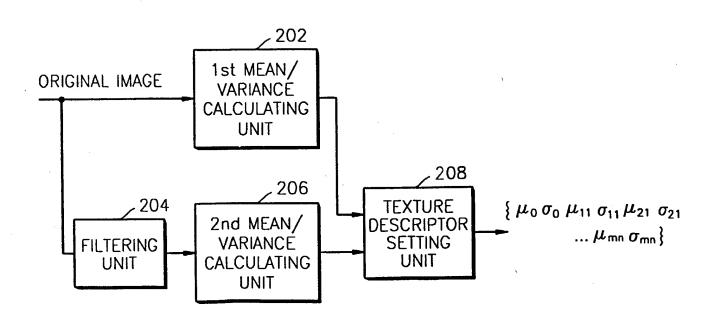


FIG. 2



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FIG. 3

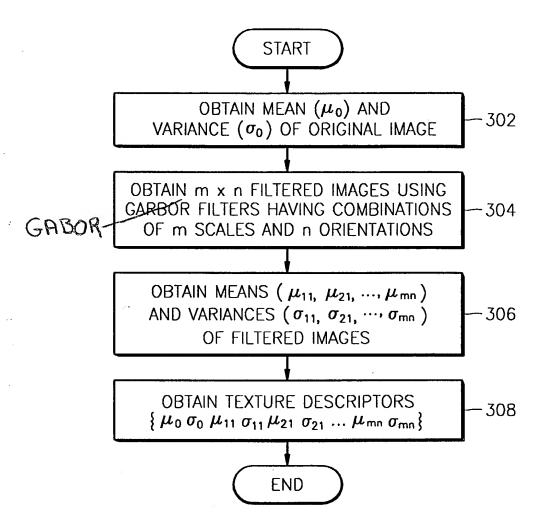
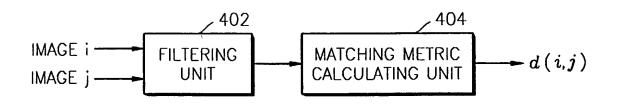


FIG. 4



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Annotated Sheet for Figure(s) 5

FIG. 5

START

GABOR

-502

-504

OBTAIN m x n FILTERED IMAGES USING GARBOR FILTERS HAVING COMBINATIONS OF m SCALES AND n ORIENTATIONS WITH RESPECT TO TWO ARBITRARY IMAGES, ASSUMING THAT m AND n ARE PREDETERMINED POSITIVE INTEGERS

CALCULATE MATCHING METRIC DEFINED BY EQUATION,

$$\begin{split} d\left(i,j\right) &= \Sigma_{\text{m,n}} \; d_{\text{m,n}}(i,j) + b \;, \; \; \text{WITH RESPECT TO} \\ \text{ORIGINAL IMAGES AND m x n FILTERED IMAGES,} \\ \text{ASSUMING THAT MEANS AND VARIANCES OF} \\ \text{PIXEL VALUES OF ORIGINAL IMAGES AND} \\ \text{THE RESPECTIVE IMAGES ARE DENOTED BY} \\ \mu \; \text{AND} \; \; \sigma_{\text{N}} \; \text{AND} \; \; \mu_{\text{O}} \; \text{AND} \; \; \sigma_{\text{O}} \;, \; \text{RESPECTIVELY,} \end{split}$$

$$b = \left| \frac{\mu_0^{(i)} - \mu_0^{(j)}}{\alpha(\mu_0)} \right| + \left| \frac{\sigma_0^{(i)} - \sigma_0^{(j)}}{\alpha(\sigma_0)} \right|$$

$$d_{\,\mathrm{m,n}}(i,j) = \left| rac{\mu_{\,\mathrm{m,n}}^{(i)} - \mu_{\,\mathrm{m,n}}^{(j)}}{lpha(\,\mu_{\,\mathrm{m,n}})}
ight| + \left| rac{\sigma_{\,\mathrm{m,n}}^{(i)} - \sigma_{\,\mathrm{m,n}}^{(j)}}{lpha(\,\sigma_{\,\mathrm{m,n}})}
ight|$$

END

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Annotated Sheet for Figure(s) 6

FIG. 6

START

GABOR

OBTAIN m x n FILTERED IMAGES USING GARBOR FILTERS HAVING COMBINATIONS OF m SCALES AND n ORIENTATIONS WITH RESPECT TO TWO ARBITRARY IMAGES, ASSUMING THAT m AND n ARE PREDETERMINED POSITIVE INTEGERS

-602

-604

CALCULATE MATCHING METRIC DEFINED BY EQUATION,

$$d_{\mathsf{m,n}}(i,j) = \min_{1 \leq t \leq \mathsf{K}} \left[\sum_{\mathsf{m,n}} \left(\left| \frac{\mu_{\mathsf{m,n}}^{(i)}}{\alpha(\mu_{\mathsf{m,n}})} - \frac{\mu_{\mathsf{m,n}}^{(j)} \oplus_{t}}{\alpha(\mu_{\mathsf{m,n}})} \right| \right]$$

$$+\left|\frac{\sigma_{\mathsf{m,n}}^{(i)}}{\alpha(\sigma_{\mathsf{m,n}})}-\frac{\sigma_{\mathsf{m,n}}^{(j)}\oplus t}{\alpha(\sigma_{\mathsf{m,n}})}\right|\right)\right]+b,$$

WITH RESPECT TO m x n FILTERED IMAGES, ASSUMING THAT MEAN AND VARIANCE OF PIXEL VALUES OF THE RESPECTIVE IMAGES ARE DENOTED BY μ AND σ , RESPECTIVELY, MEAN AND VARIANCE OF PIXEL VALUES OF ORIGINAL IMAGES ARE DENOTED BY μ_0 AND σ_0 RESPECTIVELY, K IS A PREDETERMINED POSITIVE INTEGER REPRESENTING THE NUMBER OF ORIENTATION COEFFICIENTS TO BE CONSIDERED.

$$b = \left| \frac{\mu_0^{(i)} - \mu_0^{(j)}}{\alpha(\mu_0)} \right| + \left| \frac{\sigma_0^{(i)} - \sigma_0^{(j)}}{\alpha(\sigma_0)} \right| + \text{AND} \quad \oplus$$

DENOTES A MODULO-SHIFT FUNCTION

END

DIGITAL IMAGE

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Annotated Sheet for Figure(s) 7

FIG.

START

GABOR

OBTAIN m x n FILTERED IMAGES USING GARBOR FILTERS HAVING COMBINATIONS OF m SCALES AND IN ORIENTATIONS WITH RESPECT TO TWO ARBITRARY IMAGES, ASSUMING THAT m AND n ARE PREDETERMINED POSITIVE INTEGERS

-702

-704

CALCULATE MATCHING METRIC DEFINED BY EQUATION,

$$d_{m,n}(i,j) = \min_{\substack{p=0,1\\q=0,1}} \left[\sum_{m=1}^{S-1} \sum_{m} \left(\left| \frac{\mu_{m+p,n}^{i}}{\alpha(\mu_{m+p,n})} - \frac{\mu_{m+q,n}^{j}}{\alpha(\mu_{m+q,n})} \right| \right]$$

$$+\left[\begin{array}{c|c}\sigma_{\mathsf{m+p,n}}^{\mathbf{i}} & -\left.\sigma_{\mathsf{m+q,n}}^{\mathbf{j}}\right|\\ \overline{\alpha(\sigma_{\mathsf{m+p,n}})} & \overline{\alpha(\sigma_{\mathsf{m+q,n}})}\end{array}\right]\right]+b$$

WITH RESPECT TO m x n FILTERED IMAGES, ASSUMING THAT MEAN AND VARIANCE OF PIXEL VALUES OF THE RESPECTIVE IMAGES ARE DENOTED BY μ AND σ , RESPECTIVELY, MEAN AND VARIANCE OF PIXEL VALUES OF ORIGINAL IMAGES ARE DENOTED BY μ_0 AND σ_0 RESPECTIVELY, AND

$$b = \left| \frac{\mu_0^{(i)} - \mu_0^{(j)}}{\alpha(\mu_0)} \right| + \left| \frac{\sigma_0^{(i)} - \sigma_0^{(j)}}{\alpha(\sigma_0)} \right|$$

END